

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
24 February 2005 (24.02.2005)

PCT

(10) International Publication Number
WO 2005/017122 A3

(51) International Patent Classification⁷: G01N 33/553 (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(21) International Application Number:
PCT/US2004/026437

(22) International Filing Date: 12 August 2004 (12.08.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/494,389 12 August 2003 (12.08.2003) US

(71) Applicant (for all designated States except US): ARIZONA BOARD OF REGENTS, acting for and on behalf of, Arizona State University [US/US]; c/o Arizona Technology Enterprises, LLC, 699 S. Mill Avenue, Brickyard Suite 601, Room 691AA, Tempe, AZ 85281 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): BOOKSH, Karl, Steven [US/US]; 533 E. Kyle Ct., Gilbert, AZ 85296 (US). MASSON, Jean-Francois [CA/US]; 740 West University, #271, Tempe, AZ 85281 (US).

(74) Agent: LUTHER, Barbara, J.; Quarles & Brady Streich Lang LLP, One Renaissance Square, Two North Central Avenue, Phoenix, AZ 85004 (US).

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:
27 October 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 2005/017122 A3

(54) Title: BIOCOMPATIBLE LINKERS FOR SURFACE PLASMON RESONANCE BIOSENSORS

(57) Abstract: A method of coating an SPR biosensor specific for an analyte to reduce protein fouling, the method has the steps of providing an SPR biosensor, providing a solution of 11-mercaptopoundecanol; incubating the SPR biosensor in the 11-mercaptopoundecanol solution to form a self-assembling monolayer (SAM); incubating the SPR with SAM in a solution of epichlorohydrin and diglyme; next incubating the SPR in ethanolamine; preparing a solution of EDCNHS and a biocompatible polymer; incubating the SPR from ethanolamine in the EDC/NHS/polymer solution; providing a ligand specific for the analyte in a solution; incubating the polymer-coated SPR in the ligand solution to permit the ligand to react with the polymer-coated SPR; washing the ligand-coated SPR to remove unreacted ligand, thereby providing an SPR capable of reacting with the analyte. Another method replaces the solution for the SAM layer with a solution of MHA or NHS-MHA with HT, and attaches the ligand to the resulting SAM layer.